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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/785,199	02/25/2004	Misty Azara	CQ10218	3364

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EXAMINER
COLUCCI, MICHAEL C

ART UNIT	PAPER NUMBER
2626	

NOTIFICATION DATE	DELIVERY MODE
12/09/2008	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

USPTO@sughrue.com
USPatDocketing@sughrue.com

Office Action Summary	Application No.	Applicant(s)	
	10/785,199	AZARA ET AL.	
	Examiner	Art Unit	
	MICHAEL C. COLUCCI	2626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, see Remarks pages 9 and 10, filed 10/21/2008, with respect to the rejection(s) of claim(s) 1,13, 15, 27, 29, and 30 under 35 USC 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Marcu, Daniel et al. US 20020046018 A1 (hereinafter Marcu) in view of Lee et al. US 6088673 A (hereinafter Lee). Further, in response to the telephonic interview and Remarks, Binnig et al. US 6792418 B1 (hereinafter Binnig) has been withdrawn. Though Shriberg teaches discourse analysis, prosodic feature identification, and briefly mentions speech synthesis, Examiner concurs that Shriberg in view of Binning does not specifically teach or suggest determining adjusted synthesized speech output and input text.

Claim Rejections - 35 USC § 101

2. 35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 1-14 are rejected under 35 U.S.C. 101 because:

Claims 1 and 13 fail to clearly recite a statutory process to which it is tied. Claims 1 and 13 recite purely mental steps and would not qualify as a statutory process. In order to qualify as a statutory process, the method claim should positively recite the other statutory class to which it is tied (i.e. apparatus, device, product, etc.). For example, the

method steps of claim 1 appear to recite mental steps and do not identify an apparatus that performs the recited method steps, such as a telephone system or audio device as described in the specification (present invention [0028]).

As per claim 29, the language “a carrier wave encoded to transmit a control program” does not transform the claimed subject matter into statutory subject matter.

NOTE:

Claims that recite nothing but the physical characteristics of a form of energy, such as a frequency, voltage, or the strength of a magnetic field, define energy or magnetism, per se, and as such are nonstatutory natural phenomena. O’Reilly, 56 U.S. (15 How.) at 112-14. Moreover, it does not appear that a claim reciting a signal encoded with functional descriptive material falls within any of the categories of patentable subject matter set forth in § 101.

First, a claimed signal is clearly not a "process" under § 101 because it is not a series of steps. The other three § 101 classes of machine, compositions of matter and manufactures "relate to structural entities and can be grouped as 'product' claims in order to contrast them with process claims." 1 D. Chisum, Patents § 1.02 (1994). The three product classes have traditionally required physical structure or material.

"The term machine includes every mechanical device or combination of mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. (15 How.)

252, 267 (1854). A modern definition of machine would no doubt include electronic devices which perform functions. Indeed, devices such as flip-flops and computers are referred to in computer science as sequential machines. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result and, thus, does not fit within the definition of a machine.

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A "composition of matter" "covers all compositions of two or more substances and includes all composite articles, whether they be results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders or solids." Shell Development Co. v. Watson, 149 F. Supp. 279, 280, 113 USPQ 265, 266 (D.D.C. 1957), aff'd, 252 F.2d 861, 116 USPQ 428 (D.C. Cir. 1958). A claimed signal is not matter, but a form of energy, and therefore is not a composition of matter.

The Supreme Court has read the term "manufacture" in accordance with its dictionary definition to mean "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties, or combinations, whether by hand-labor or by machinery." Diamond v. Chakrabarty, 447 U.S. 303, 308, 206 USPQ 193, 196-97 (1980) (quoting American Fruit Growers, Inc. v. Brogdex Co., 283 U.S. 1, 11, 8 USPQ 131, 133 (1931), which, in turn, quotes the Century Dictionary). Other courts have applied similar definitions. See American Disappearing Bed Co. v. Arnaelsteen, 182 F. 324, 325 (9th Cir. 1910), cert. denied, 220 U.S. 622 (1911). These definitions require physical substance, which a claimed signal does not have. Congress can be presumed to be aware of an administrative or judicial interpretation of a statute

and to adopt that interpretation when it re-enacts a statute without change. Lorillard v. Pons, 434 U.S. 575, 580 (1978). Thus, Congress must be presumed to have been aware of the interpretation of manufacture in American Fruit Growers when it passed the 1952 Patent Act.

A manufacture is also defined as the residual class of product. 1 Chisum, § 1.02[3] (citing W. Robinson, The Law of Patents for Useful Inventions 270 (1890)). 56

A product is a tangible physical article or object, some form of matter, which a signal is not. That the other two product classes, machine and composition of matter, require physical matter is evidence that a manufacture was also intended to require physical matter. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus, a signal does not fall within one of the four statutory classes of § 101.

On the other hand, from a technological standpoint, a signal encoded with functional descriptive material is similar to a computer-readable memory encoded with functional descriptive material, in that they both create a functional interrelationship with a computer. In other words, a computer is able to execute the encoded functions, regardless of whether the format is a disk or a signal.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over "Can Prosody Aid the Automatic Classification of Dialog Acts in Conversational Speech?" (hereinafter Shriberg) in view of Marcu et al. US 20020046018 A1 (hereinafter Marcu) and further in view of Lee et al. US 6088673 A (hereinafter Lee).

Re claims 1, 15, 29, and 30, Shriberg teaches a method of synthesizing speech (Page 5) using discourse function level prosodic features (Pages 14-18) comprising the steps of:

determining discourse functions in the input text the discourse functions being determined based on a mapping between basic discourse constituents of the determined theory of discourse analysis and a plurality of discourse functions (Pages 8-13);

determining a model of discourse function level prosodic features (Pages 14-18);

However, Shriberg fails to teach determining a theory of discourse analysis from plurality of theories of discourse analysis;

Marcu teaches a channel-based summarization process 1700 is to receive the input text. Although the embodiment described above uses sentences as the input text, any other text segment could be used instead, for example, clauses, paragraphs, or entire treatises. Next, in step 1704, the input text is parsed to produce a syntactic tree

in the style of FIG. 11, which is used in step 1706 as the basis of generating multiple possible solutions (e.g., the shared-forest structure described above). If a whole text is given as input, the text can be parsed to produce a discourse tree, and the algorithm described here will operate on the discourse tree (Marcu [0220-0221]).

Further, Marcu teaches a discourse structure for an input text segment (e.g., a clause, a sentence, a paragraph or a treatise) is determined by generating a set of one or more discourse parsing decision rules based on a training set, and determining a discourse structure for the input text segment by applying the generated set of discourse parsing decision rules to the input text segment (Marcu [0010]).

Furthermore, Marcu teaches generating the set of discourse parsing decision rules may include iteratively performing one or more operations (e.g., a shift operation and one or more different types of reduce operations) on a set of edus to incrementally build the annotated text segment associated with the set of edus. The different types of reduce operations may include one or more of the following six operations: reduce-ns, reduce-sn, reduce-nn, reduce-below-ns, reduce-below-sn, reduce-below-nn. The six reduce operations and the shift operation may be sufficient to derive the discourse tree of any input text segment (Marcu [0012]).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Shriberg to incorporate determining a theory of discourse analysis from plurality of theories of discourse analysis as taught by Marcu to allow for the proper rules to analyze input text, wherein the type of input

(phrases, sentences, words, etc.) determine how to determine the structure of text such as rhetorical analysis (Marcu [0012]).

However, Shriberg in view of Marcu fail to teach

determining input text;

determining adjusted synthesized speech output based on the discourse functions, the model of discourse function level prosodic features (pages 14-18), and the input text

Lee teaches a TTS for interlocking with multimedia according to the present invention comprises a multimedia information input unit for organizing text, prosody, the information on synchronization with moving picture, lip-shape, and the information such as individual property; a data distributor by each media for distributing the information of the multimedia information input unit into the information by each media; a language processor for converting the text distributed by the data distributor by each media into phoneme stream, presuming prosody information and symbolizing the information; a prosody processor for calculating a value of prosody control parameter from the symbolized prosody information using a rule and a table; a synchronization adjuster for adjusting the duration of the phoneme using the synchronization information distributed by the data distributor by each media; a signal processor for producing a synthesized speech using the prosody control parameter and data in a synthesis unit database; and a picture output apparatus for outputting the picture information distributed by the data distributor by each media onto a screen (Lee Col. 2 lines 29-49 & Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Shriberg in view of Marcu to incorporate determining input text and determining adjusted synthesized speech output based on the discourse functions, the model of discourse function level prosodic features, and the input text as taught by Lee to allow for the proper rules to analyze input text, wherein prosody control is established such as phonemic features of text in order to modify output speech synthesis to adapt in a multilingual environment (Lee Col. 2 lines 29-49 & Fig. 1).

Re claims 2 and 16, Shriberg teaches the method of claim 1, wherein the discourse functions are determined based on the determined theory of discourse analysis (Pages 8-13).

Re claims 3 and 17, Shriberg fails to teach the method of claim 2, in which the theory of discourse analysis is at least one of: the Linguistic Discourse Model, the Unified Linguistic Discourse Model, Rhetorical Structures Theory, Discourse Structure Theory and Structured Discourse Representation Theory;

Re claims 4 and 18, Shriberg teaches the method of claim 1, wherein the output information (Pages 4-5, Why Use Prosody?) is at least one of text information and application output information (Pages 8-13).

Re claims 5 and 19, Shriberg teaches the method of claim 1, wherein determining the adjusted synthesized speech output (Pages 4-5, Why Use Prosody?) further comprises the steps of:

determining discourse function level prosodic feature adjustments (Pages 14-18);

However, Shriberg fails to teach determining input text;

determining the adjusted synthesized speech output based on the synthesized speech output and the discourse level prosodic feature adjustments

Lee teaches a TTS for interlocking with multimedia according to the present invention comprises a multimedia information input unit for organizing text, prosody, the information on synchronization with moving picture, lip-shape, and the information such as individual property; a data distributor by each media for distributing the information of the multimedia information input unit into the information by each media; a language processor for converting the text distributed by the data distributor by each media into phoneme stream, presuming prosody information and symbolizing the information; a prosody processor for calculating a value of prosody control parameter from the symbolized prosody information using a rule and a table; a synchronization adjuster for adjusting the duration of the phoneme using the synchronization information distributed by the data distributor by each media; a signal processor for producing a synthesized speech using the prosody control parameter and data in a synthesis unit database; and a picture output apparatus for outputting the picture information distributed by the data distributor by each media onto a screen (Lee Col. 2 lines 29-49 & Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Shriberg in view of Marcu to incorporate determining input text and determining the adjusted synthesized speech output based on the synthesized speech output and the discourse level prosodic feature adjustments as taught by Lee to allow for the proper rules to analyze input text, wherein prosody control is established such as phonemic features of text in order to modify output speech synthesis to adapt in a multilingual environment (Lee Col. 2 lines 29-49 & Fig. 1).

Re claims 6 and 20, Shriberg teaches the method system of claim 1, wherein the model of discourse function level prosodic features (Pages 14-18) is a predictive model of discourse functions (Page 19).

Re claims 7 and 21, Shriberg teaches the method of claim 6, in which the predictive models are determined based on at least one of: machine learning and rules (Page 19).

Re claims 8 and 22, Shriberg teaches the method of claim 1, in which the prosodic features occur in at least one of a location: preceding, within and following the associated discourse function (Page 14).

Re claims 9 and 23, Shriberg teaches the method of claim 1, in which the prosodic features are encoded within a prosodic feature vector.

Re claims 10 and 24, Shriberg teaches the method of claim 9, in which the prosodic feature vector is a multimodal feature vector (Pages 14-18 & Table 10).

Re claims 11 and 25, Shriberg teaches the method of claim 1, in which the discourse functions include an intra-sentential discourse function (Page 8 & Table 1).

Re claims 12 and 26, Shriberg teaches the method of claim 1, in which the discourse functions include an inter-sentential discourse function (Page 8 & Table 1).

Re claim 13, Shriberg teaches a method of synthesizing speech using discourse function level prosodic features comprising the steps of:

determining discourse functions in the input text based on a contextually aware theory of discourse analysis using a mapping between basic discourse constituents of the contextually aware theory of discourse analysis and a plurality of discourse functions (Pages 8-13);

determining a model of discourse function level prosodic features (Pages 14-18);

However, Shriberg fails to teach determining input text;

determining adjusted synthesized speech output based on the discourse functions and the model of discourse function level prosodic features (pages 14-18)

Lee teaches a TTS for interlocking with multimedia according to the present invention comprises a multimedia information input unit for organizing text, prosody, the information on synchronization with moving picture, lip-shape, and the information such as individual property; a data distributor by each media for distributing the information of the multimedia information input unit into the information by each media; a language processor for converting the text distributed by the data distributor by each media into phoneme stream, presuming prosody information and symbolizing the information; a prosody processor for calculating a value of prosody control parameter from the symbolized prosody information using a rule and a table; a synchronization adjuster for adjusting the duration of the phoneme using the synchronization information distributed by the data distributor by each media; a signal processor for producing a synthesized speech using the prosody control parameter and data in a synthesis unit database; and a picture output apparatus for outputting the picture information distributed by the data distributor by each media onto a screen (Lee Col. 2 lines 29-49 & Fig. 1).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the system of Shriberg in view of Marcu to incorporate determining input text and determining adjusted synthesized speech output based on the discourse functions and the model of discourse function level prosodic features as taught by Lee to allow for the proper rules to analyze input text, wherein prosody control

is established such as phonemic features of text in order to modify output speech synthesis to adapt in a multilingual environment (Lee Col. 2 lines 29-49 & Fig. 1).

Re claims 14 and 28, Shriberg teaches the method of claim 13, in which the context is at least one of: semantic, pragmatic, and syntactic context (pages 4-5).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Colucci whose telephone number is (571)-270-1847. The examiner can normally be reached on 9:30 am - 6:00 pm, Monday-Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571)-272-7602. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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